3: Barrett E-5 (1908-1909)1925
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731 361 floods it not infrequently happens that the waters rise so high as completely to surround the house, and indeed sometimes to within a few inches of its floor.

132 The excessive rainfall naturally produces great humidity,[3] which would be very oppressive were it not for the fact that the sky is almost constantly overcast, so that the full power of the sun is rarely felt in the region. This fortunate circumstance renders the climate, which would otherwise be almost intolerable, very equable and pleasant.

RESOURCES

TREES AND PLANTS

137 By virtue of the climatic conditions above set forth the vegetation of the Cayapa region is typically tropical. Almost every foot of ground is covered by a dense jungle growth comprising many species of trees, palms, shrubs, and smaller plants, and characterized by an abundance of vines and parasitic vegetation. So dense is this growth that it is practically impossible to travel on land even a short distance without the use of a machete.

137 Among the most important and characteristic plants of the region are the various species of palms, many of which are put to use by the Cayapa in one way or another. In the following list of the trees and plants of this section are given the Cayapa and the local Spanish names of those palms which are most useful to the

[3] One of the engineer's reports, above referred to, places the humidity at an average of about 80 per cent.

[illegible] 116, pp. [illegible] A]

[p. 6]

3: Barrett E-5 (1908-1909)1925
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Indians. A number of these palms produce foods, and several provide leaves which are used in making house-thatch, while the trunk of one makes a durable flooring for houses. These matters will be taken up more specifically in the discussion of these subjects.

Another characteristic plant is the giant bamboo, which grows in clumps at frequent intervals along the banks of the rivers, especially along their lower courses. This bamboo often reaches a height of seventy feet or more, and has a basal diameter approximating ten inches. These immense stems serve various useful purposes, among the most important of which may be mentioned that of joists and rafters in house-building.

There is a great variety of trees in the jungle, many of which produce useful woods. Perhaps the most important uses of wood among the Cayapa are in house construction and in canoe-making. In the former the guayacan, which provides the almost indestructible pillars that support the pile structures, is of greatest importance. Several varieties of trees are used in canoe-making, but two or three kinds are preferred to all others.

Another characteristic of the jungle is the association of many species of plant life together in one area. Whereas in the North Temperate zone it is customary to see large tracts of land occupied by a single principal species of tree, such as the pine, in this Ecuadorian region a considerable number of trees of one species growing close together and in such manner as to form anything comparable with a grove is rarely seen. As a

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●137 rule the various species of trees are associated in a strictly heterogeneous manner, and in all cases there is a fairly dense undergrowth, besides vines and aerial roots in abundance. These latter hang from the trees in such profusion as alone to make it necessary to cut a trail in proceeding even for a short distance by land.

824 137 Of these aerial roots the one known by the local Spanish term *pitigua* deserves special mention. It is very strong and durable, is little affected by climate, [342] and is not attacked by insects. It is, therefore, extensively employed in binding joints in house-building, and indeed wherever a good binding material is needed. [285] It is also extensively used in making certain kinds of basketry.

This general mention of the natural vegetal resources of the Cayapa region will suffice for present consideration, but the separate plants and their particular uses will be treated in detail in the following pages in connection with matters with which they are particularly concerned.

The heterogeneity of the flora of the region, above referred to, is fortunate for its inhabitants, since it places nearly every kind of plant, on which so much of the culture of the Cayapa Indians depends, within comparatively easy reach of all. That the flora should be so varied in any given locality, and that any given species should be so generally distributed, is due to the almost identical climate, soil, and other environmental conditions throughout the region.

The following is a list of the principal vegetal resources, both indigenous and introduced, employed by the Cayapa:

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Trees and Plants

ENGLISH	SPANISH	CAYAPA
	guayacan	waiaka'n[4]
rubber	caucho	sa'be
cedar	cedro	inū'n-tcī, orinō'n-tcī
	guadaripo	tū-tcī
	amarillo	pītōa'lō
	balsa	na'na
	dama jaua	te'ckī-tcī or tû'ckī-tcī
	achote	ca'imū (canyūñ-tcī = the shrub)
	hawa	ma'iñ-tcī
	guabo	cī'lyū (cī'-tcī = the tree). See p. 109
	guabo macheton	mactĕ-pa' cīlyū
	guabo dulce	pī' cīlyū
	guabo tacoane	ni'ñga cīlyū
	guabo agria	sa' cīlyū
		pū' cīlyū
calabash	calabaza	wa'iyū (wa'i-tcī = the tree), also cu'lya
chocolate	cacao	kaka'bō
papaw	papaya	papa'ia
	caimito	a'kū'iñya (akūi'ñ-tcī = the tree)
	zapote	sapō'te
orange	naranjo	la'nsa (lansa'-tcī = the tree)

[4] In some instances these names are invariably given by informants with *tcī*, signifying tree, following the root of the word; in others this is never added unless it is intended particularly to show that the tree itself is meant. In some cases the addition of *tcī* causes considerable phonetic change in the root. In those cases where the simple root form and also the compound form were obtained, the latter follows the former in parentheses.

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ENGLISH	SPANISH	CAYAPA
lemon	limon	lē′mō (lēmō′-tcī = the tree)
	chocolatillo	tcōkōla′te, tcōkōlaī′a
sandpaper tree		lya′pic-hakī
plantain	platano	pa′nda
banana	seda	sē′da, sēda-kīnī′a
	hoja blanca	fī′ba-hakī[5]
	hoja negra	e′lūñ-hakī
sugar-cane	caña dulce	e′lla
wild cane	caña brava	nya′nyī
corn	maiz	pī′cū
tobacco	tabaco	ta′kō
	yuca	kū′′tcū, kū′ctcū
	rascadera	tū′a
pineapple	piña	tcī′lya
pepper	aji	tyū
	yerba buena	ēvī vē′nō[6]
pumpkin	sapayo	ū
	kuna-kuna	wa′-tcī
	matamba	bī′ta
		nintcū′a[7]
	tangarea	ōlō′n-tcī
	Palms	
ivory nut	palma tagua	tī′mō būlō (ti′ñ-tcī = the palm)[8]
	palma real	ūya′-tcī

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[5] This term, like the Spanish *hoja blanca*, signifies "white leaf."

[6] The name of this introduced plant is obviously a corruption of the Spanish.

[7] A porous vine used as a smoking material by children.

[8] In the majority of cases the names given by informants for these palms are combinations of the simple names of the palms with the word *tcī*, signifying "tree." The five cases in which the simple name was obtainable are here noted, the compound terms following them in parentheses.

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ENGLISH	SPANISH	CAYAPA
	palma palmicha	sā′wī (sa′n-tcī = the palm)
	palma chonta dura	ka′imbī (kanō′-tcī = the palm)
	palma chapil or milpeso	kūla′pō-tcī
	palma guividnande	vīñga′-tcī
	palma guinul	pūka″-tcī
	palma pambil	bū′a (bū′iñ-tcī = the palm)
	palma crespa	pī′nlya-tcī
	palma chontilla	pē′aputc
coconut	palma coco	kō′kō (kō′kō-tcī = the palm)
fan-leaf palm	palma rampile	pī′tcūa
		ya′ha
		kapi′m-tcī

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GAME

Game is abundant in the jungle, and there are fish of various species in the streams. The ocean is within a comparatively short distance and its shores abound in many species of Crustacea and mollusks, as well as in the various salt-water fish, all highly prized by the Indians. 136

The specific uses of each species and its mode of capture, together with other points of interest in connection with it, will be taken up in detail at appropriate points in the following pages. For the present purposes it will be sufficient to give lists of the principal mammals, birds, fishes, Crustacea, mollusks, reptiles, and amphibians which are found in the region.

These lists, like the list of trees and plants previously given, are by no means complete, since they include

angle with the Río Santiago, and together they make up the second largest drainage system in the northwestern part of the province of Esmeraldas. The confluence of the two rivers lies approximately at 1°5' north latitude, or about 90 miles due north of the equator, and 78°59' west longitude. The area is a tropical rain forest because of the very cold Humboldt Current that flows along much of the Ecuadorian coast, however, extremely dense clouds usually cover the area as far inland as the foothills of the Andes, and moderate the temperatures. They range from 65° to 75° Fahrenheit at night and from 70° to 90° during the daytime, depending upon the amount of cloud cover. Generally, the sky is a very bright overcast. When the cloud cover lessens, the sky is an intense hot blue. There are no weather stations in the Río Cayapas area, and consequently we have no readings of any significance. Barrett (1925:4) estimated the annual rainfall on the Río Santiago at between 24.63 feet to 26.46 feet. Since the distances between the Río Santiago and the Río Cayapas are not very great, Barrett's observations may reasonably be applied to the Cayapa area as well.

The low alluvial coastal area of the Cayapas-

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Santiago drainage system is fringed by a sandy beach and backed by a brackish mangrove forest swamp that extends inland for some two to four miles, at which point a slight elevation--no more than four to six feet above low tide--begins to be noticed. When one moves up past the town of Borbon, at the confluence of the two major rivers, the countryside takes on the appearance of a fairly flat plain. As one approaches the mouth of the Río Cemerones, which lies at the right hand side as one moves up the Río Cayapas, a marked change in the character of the landscape begins to emerge. Hills thickly covered with green bush and tree growth become more frequent, although they are not too precipitous, ranging from 90 to about 150 feet in height. The predominant color pattern is green, brown, and gray. The main river, especially in flood, is brown-green. Skies are generally bright gray and the vegetation on all sides fall in innumerable shades of green. Occasionally, along the lower reaches of the Río Cayapas huge clumps of water Hyacynths float like bright purple rafts towards the sea.

[137]

Normally, the Río Cayapas flows quite gently, for the rise in altitude is slight until the actual

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[137]

It is the nature of the tropical rain forest that neglected clearings revert to a condition closely resembling the pristine within a few years. In this event, it is difficult to determine whether or not one is cutting virgin growth. From time to time, this leads to a conflict that may be settled in any of the ways described above, or may be handled in the manner illustrated below.

Antonito demands a quit claim. About 1957, Ciro Añapa and his brother Santiagueño were told by Antonito Añapa, that they were working on some land that he had cut from monte jivaro. When Ciro's brother saw the land, however, it looked like jungle once more, and he pointed out that it must have been many years since Antonito had worked it. At a party at Trivinio's house when everyone was drunk, Antonito demanded one hundred sucres. Ciro replied that he never remembered Antonito's working the land under dispute. Heverico, who was present, told Ciro and his brother to pay the hundred sucres, saying that, after all, it was not a large sum of money. Heverico, however, did not know if the land belonged to Antonito or not. Ciro and his brother agreed to pay the